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THE PHOTOGRAPH AS A METHODOLOGICAL STRATEGY FOR TEACHING AND LEARNING ABOUT THE SEMIARID REGION

Lysiane dos Santos Lima
Discente do curso de Mestrado em Geografia pelo Programa de Pós-graduação da Universidade Estadual Vale do Acaraú (UVA – MAG).
Orcid: 0000-0002-7627-9963
lysiane.lima7563@gmail.com

Francisco Henrique Alves dos Santos
Ciências Biológicas pela Universidade Estadual Vale do Acaraú (UVA).
henriquea103697@gmail.com

RESUMO
O Semiárido brasileiro é o tipo de clima predominante na região Nordeste do país, presente nos nove estados da região e também em uma pequena parcela no norte de Minas Gerais. No total, ocupa 12% do território nacional e abriga cerca de 28 milhões de habitantes divididos entre contextos urbanos (62%) e contextos rurais (38%), sendo, portanto, um dos semiáridos mais povoados do mundo. Este estudo tem o objetivo de identificar de que forma a fotografia está sendo utilizada como estratégia pedagógica e como a mesma pode contribuir para o ensino e compreensão do semiárido nordestino. Para este estudo foi realizado uma revisão literária sobre o uso da fotografia como ferramenta pedagógica no ensino do semiárido. A pesquisa contou com um número considerável de bibliografias encontradas nas plataformas *Google Acadêmico* e *SciELO*, além de buscas em material físico. Por fim chegou-se à conclusão de que ao se fazer uso da fotografia, pode-se construir um aprendizado sobre o semiárido de uma forma mais lúdica, proporcionar um contato maior com a realidade já que os alunos estariam eles mesmo em contato com o ambiente ao registrar as imagens.
Palavras-Chave: Biologia; Educação; Geografia; Interdisciplinaridade.

ABSTRACT
The Tropical Semiarid is the predominant climate of the Brazilian Northeast, which characterizes its nine states and a small portion to the north of Minas Gerais. It occupies 12% of the national territory and is home to about 28 million people divided between urban (62%) and rural (38%) contexts, being one of the world's most populated semiarid region. Unfortunately, when it comes to the pedagogic context, the Brazilian semiarid region continues to be underestimated, mostly because its schools have a curriculum structure that is poorly integrated with its real features and the need for its conservation. The disciplines of Science/Biology and Geography are the ones that most address the contents and studies focused on the semiarid region and they need tools that develop motivation for learning. Nowadays, an accessible didactic tool is the photography, considered very useful when it comes to teaching. Given this, we performed a literary review on the use of photography as a pedagogical tool of teaching about the semiarid region, consulting journal portals such as Scielo, Google Scholar and CAPES, in addition to physical material. We found out that photography becomes a very effective pedagogical resource in teaching and learning about the semiarid, being quite accessible and allowing the development of activities of observation and description of various phenomena, even if the individual does not know this particular environment.
Keywords: Biology; Education; Geography; Interdisciplinarity.

INTRODUCTION

The Tropical Semiarid is the predominant climate of the Brazilian Northeast, which characterizes its nine states and a small portion to the north of Minas Gerais. The region occupies 12% of the national territory and is home to about 28 million people divided between urban (62%) and rural (38%) contexts, being, therefore, one of the world's most populated semiarid region (MARTINS; OLIVEIRA; CARVALHO, 2015; MCTI, 2021).

Among the main characteristics of the semi-arid region, there are high rates, low cloud cover, the highest rates of insolation in the country, and the highest thermal averages as well, the lowest percentages of the relative humidity and the scarcest and most irregular rainfall, limited to short periods of the year (QUEIROZ et al., 2018).

The referred area shows a great richness in cultural, social, environmental and economic aspects and is particularly susceptible to climate changes. Its climatology has a frequent scientific monitoring, but the popular wisdom on the subject is also considered (MCTI, 2021).

Even with so many important characteristics, when it comes to the pedagogic context, the Brazilian semiarid region continues to be underestimated, mostly because its schools have a curriculum structure that is poorly integrated with its real features and the need for its conservation. Given this, there are few expectations for changes in the local socioeconomic and environmental scenario (SILVA et al., 2016).

It is important to emphasize that pedagogical practices on Environmental Education require a very complex path, especially when focused on areas that are not well valued, as in the case of the semiarid region. Plans for reflection and experiences acquired through carrying out experimental projects are needed and they should be supported by adequate and efficient methods of teaching (ARAÚJO; SOUSA, 2011; CONTI; SCHROEDER, 2013).

The disciplines of Science/Biology and Geography are the ones that most address the contents and studies focused on the semiarid region (ARAÚJO; SOUSA, 2011; FARIAS; MARQUESAN, 2016). In these disciplines, students can have a more profound contact with the environment in which they live, which imposes that the teacher transform its traditional classes into something dynamic, interactive and attractive (CONTI; SCHROEDER, 2013).

In the teaching and learning process, incentive is an important factor that needs to be encouraged. The teacher must act as a facilitator in the construction of the training process, working with the student to develop motivation for learning (COSTOLDI; POLINARSKI, 2009). It is possible to use varied materials as a form of aid in teaching and learning in order to develop this process, which ends up facilitating the teacher-student-knowledge relationship (SOUZA, 2007).

Also, according to Souza (2007), it can be defined as a didactic resource all material used with the purpose of helping in the teaching and learning of the content applied by the teacher to the students. There are several didactic resources that can be used: blackboard and chalk, books, articles, academic works, software, Power Point presentation, music, movies, physical exercises, CDs, DVDs, tours, games, model constructions and many others (FERREIRA, 2007).

Nowadays, an accessible didactic tool is the photography, which can be considered very useful when it comes to teaching. According to Silva et al., (2018), photography is a new way of reading the world and provides an understanding of the landscape in a given time

and space. Consequently, if taken to teaching, can arise the students' interest to find out about these landscapes, "inserting observation and description activities of phenomena in science" (FARIA; CUNHA, 2016, p. 57).

Therefore, this study aims to identify how photography is being used as a methodological strategy and how it can contribute to the teaching and understanding of the northeastern semiarid region in the disciplines of Biology and Geography.

METHODS

We performed a literary review on the use of photography as a pedagogical tool of teaching about the semiarid region. We also evaluated how the disciplines of Biology and Geography are working with this subject.

For the literature search, we consulted journal portals such as Scielo, Google Scholar and CAPES, in addition to physical material.

RESULTS AND DISCUSSION

According to Figueiredo (2018, p. 27, own translate):

> When talking about Science and Biology, nowadays, a lot of information is given without the student being able to process, interpret or argue about it. The various concepts discussed and the diversity of definitions lead to a certain lack of interest in the themes. Exactly because they are not used to searching, thinking, interpreting questions and giving meaning, the student accepts this information without questioning it and even if such knowledge benefits him/her, he/she cannot use it (apud DEMO, 2002).

The curricular component presents a wealth of content and knowledge, and each discipline features a range of themes, definition, scientific terms and images. When a merely expository and traditional class approaches these features, they lead to an unsatisfactory learning.

A clear example is the botanic contents. In high school, Silva and Aoyama (2021) point out that the approach of plant biology in a traditional class format ends up not making the students aware of theme's importance and the subject is seen as boring and unnecessary.

When we think about the subject in the context of the semiarid region, which is already seen as uninteresting, dry and lifeless, we need to use a methodological tactic that convey an understanding closer to reality, in which the student can perceive, by himself, the beauties of this environment.

It was observed that in the schools of the Brazilian Northeast there are few teaching resources available for natural science classes, which could facilitate the planning of pedagogical actions (NUÑEZ et al., 2003). In this scenario, the use of photography as a learning tool can be assertive.

Borges, Aranha and Sabino (2010, p. 150-151, own translate) describe that:

> Photography is an instrument of great pedagogical importance and often essential for various areas of teaching. It, as a non-verbal language, also contributes decisively to the realization of theoretical research, artistic and cultural manifestations and as an effective adjunct in numerous scientific-technological discoveries.

Given this, Coutinho et al. (2010) reinforce that images are uniquely important for the construction of knowledge. Therefore, by making use of photography, we can build an effective learning about the semiarid in a more playful way, providing a greater student contact with the environment's reality in the moment of the images registration.

In Geography, the study of the semiarid region is widely explored. In the Physical Geography, the environment have its geological, geomorphological, climatic, hydrological, phytogeography and pedological aspects studied, improving the understanding of the region's origin. At Human Geography, the main subject of study considers how the society changed the landscape through the years.

Faced with a vast amount of methodologies currently used, photography has gaining more and more prominence in the acquisition of knowledge in geographical sciences (SILVA et al., 2018). For a long time, we used to know Geography as the science of description and differentiation of places and landscapes. In this way, the professionals already used the images as an illustration to these differences (MEURER; SPIRONELLO, 2020).

During exploration mission that took place between the 15th and 16th centuries, there were, among the team members, professionals responsible for capturing the images of the new lands discovered, through drawings or paintings. The very emergence of the term landscape dates back to the 15th century and it contained association with artistic representations of parts of nature, where it was possible to see completely composed of natural elements, and thus leaving the human representation as less important (CORRÊA; ROSENDAHL, 2012).

Given this, Corrêa and Rosendahl (2012) already show how important was the representation of the landscape in images and through the years, with the advances of technology, photography stood out as a tool capable of contributing enough for learning.

When researching images of the northeastern semiarid region, it is possible to perceive that most of the results refer to drought, cracked soil, thin animals, poor sanitation and basic resources. Unfortunately, the region is still view as extremely poor (BUAINAIN; GARCIA, 2013). This reflects the need of researches in the area to change this concept (REDIN, 2021).

Schools play a key role in connection learning about the semiarid with the daily life of students. This is where the teacher's ability to motivate his class comes in, proposing methods of teaching that are more attractive (CAVALCANTI, 2010).

For Travassos (2001), photography is an instrument that resonates memories, with facts and information capable of "materializing" an environment never visited by many. This brings a range of new information about the richness of the semiarid, including for those who are not familiar with the region.

We understand, according to Caetano and Bezzi (2011), the use of photography as a visible aspect of social transformations in the geographic space, carrying a greater understanding of the physical and social events that occur or have occurred in a particular region.

Therefore, this tool proves to be of great value for the study of the semiarid and its natural characteristics, from which it is possible to pass on to the new generations that is possible to use photography as a resource for learning about the diverse biodiversity of the area.

Figure 1: Example of photographs taken by students.
Source: Faria and Cunha (2016).

Figure 2: Photographs of natural elements.
Soucer: Silva and Feitosa (2019).

FINAL REMARKS

This study provided a literary analysis of the use of photography as a teaching tool about the Brazilian semiarid region. We observed that the use of this method is more frequent in the discipline of Biology, which considers all the biodiversity found in this environment, and in the discipline of Geography, when the subject involves the elements that compose the semiarid landscapes.

In Biology, this teaching instrument proved to be very important, since we can use it in studies that aimed identifying living beings in nature and understanding more detailed contents, such as Botany. In Geography, it is possible to highlight the use of photography

to understand mainly about the relief and all the elements that forms the semiarid landscapes, including its relationship with humans.

Therefore, photography becomes a very effective pedagogical resource in teaching and learning about the semiarid. It is quite accessible and allows the development of activities of observation and description of phenomena, even if the individual does not know this environment.

REFERENCES

AOYAMA, E. M.; SILVA, V. T. da. Desafio da Imagem: uso da Fotografia no Processo de Ensino-Aprendizagem de Botânica. **Revista de Ensino de Biologia da SBEnBio** – São Paulo, v. 14, n. 1, p. 616-638, 2021.

ARAÚJO, C. de. S. F.; SOUSA, A. N. de. Estudo do Processo de Desertificação na Caatinga: uma Proposta de Educação Ambiental. **Ciência & Educação**, Campina Grande, v. 17, n. 4, p. 975-986, 2011.

BORGES, M. D.; ARANHA, J. M.; SABINO, J. A Fotografia de Natureza como Instrumento para Educação Ambiental. **Ciência & Educação**, Baurú, v. 16, n. 1, p. 149-161, 2010.

BUAINAIN, A. M.; GARCIA, J. R. Desenvolvimento rural do semiárido brasileiro: transformações recentes, desafios e perspectivas. **Revista Franco-Brasileira de Geografia.** São Paulo, n.19, 24p. 2013.

CAETANO, J. N.; BEZZI, M. L. Reflexões na geografia cultural: a materialidade e a imaterialidade da cultura. **Sociedade & Natureza**, Uberlândia, v. 23, n. 3, 453-466, 2011.

CASTOLDI, R.; POLINARSKI, C. A. A Utilização de Recursos Didático-Pedagógicos na Motivação da Aprendizagem. In: Simpósio Nacional de Ensino de Ciência e Tecnologia, I, Paraná. **Anais UFPR**. v. 1, p. 684-69, 2009.

CAVALCANTI, L. de. S. **Geografia, Escola e Construção de Conhecimentos**. 14 ed. São Paulo: Papirus, 2010.

CONTI, I. L.; SCHROEDER, E. O. **Convivência com o Semiárido Brasileiro:** Autonomia e Protagonismo Social. 1 ed. Brasília: Instituto Ambiental Brasil Sustentável – IABS, 2013.

CORRÊA, R. L.; ROSENDAHL, Z. **Geografia cultural:** uma antologia. 1 ed. Rio de Janeiro: Eduerj, 2012.

COUTINHO, F. A.; SOARES, A. G.; BRAGA, S. A. de. M.; CHAVES, A. C. L.; COSTA, F. de. J. Análise do valor didático de imagens presentes em livros de Biologia para o ensino médio. **Revista Brasileira de Pesquisa em Educação em Ciências**, Belo Horizonte, v. 10, n. 3, 2010.

DEMO, P. **Educar pela pesquisa**. São Paulo: Autores Associados, 2002.

FARIA, F. C.; CUNHA, M. B. da. 'Olha o passarinho!' A fotografia no Ensino de Ciências**. Acta Scientiarum Human and Social Sciences,** Maringá, v. 38, n. 1, p. 57-64, 2016.

FARIAS, L. M.; MARQUESAN, F. F. S. Educação (contextualizada) no Semiárido Nordestino. In: CONGRESSO BRASILEIRO DE ESTUDOS ORGANIZACIONAIS, IV, 2016, Porto Alegre. **Anais.** p. 1-14.

FERREIRA, S. M. M. **Os recursos didáticos no processo de ensino-aprendizagem:** Estudo de caso da escola secundária Cónego Jacinto. 2007. 69 f. Monografia (Bacharelado em Ciências da Educação e Praxis Educativa) - Universidade Jean Piaget de Cabo Verde, Grande Cidade da Praia, Santiago, Cabo Verde. 2007.

FIGUEIREDO, G. F. de. **A Formação de Professores/as no Curso de Licenciatura em Ciências Biológicas no CFP/UFCG:** Desafios para a Implementação de uma Educação para Convivência com o Semiárido. 2018. 53f. Monografia (Licenciatura em Ciências Biológicas) - Universidade Federal de Campina Grande UFCG/CFP, Cajazeiras, 2018.

MARTINS, E. S. P. R.; OLIVEIRA, S. B. P. de.; CARVALHO, M. S. B. de. S. **Convivência com o Semiárido:** clima. 1 ed. Fortaleza: Fundação Demócrito Rocha, 2015.

MCTI - Ministério da Ciência, Tecnologia e Inovações: **Semiárido brasileiro**. Governo Federal. Disponível em: https://www.gov.br/mcti/pt-br/rede-mcti/insa/semiarido-brasileiro. Acesso em: 08 jun. 2021.

MEURER, M.; SPIRONELLO, R. L. Geografia, Fotografia e a Construção de Conceitos sobre o Espaço Urbano: Experiências Desenvolvidas na Disciplina de Fotogeografia nos Cursos de Geografia da UFPel. **Revista Contexto & Educação.** Ijuí: Editora Unijuí, v. 35, n. 112, 2020.

NÚÑEZ, I. B.; RAMALHO, B. L.; SILVA, I. K. P. da.; CAMPOS, A. P. N. A Seleção dos Livros Didáticos: um Saber Necessário ao Professor. O Caso Do Ensino De Ciências. **OEI-Revista Iberoamericana de Educación,** ISSN: 1681-5653, p. 1-11, 2003.

QUEIROZ, R. T. de.; CORDEIRO, L. S.; SAMPAIO, V. da. S.; RIBEIRO, R. de. T. M.; LOIOLA, M. I. B. A Região Nordeste. In: CORADIN, L.; CAMILLO, J.; PAREYN, F. G. C. **Espécies Nativas da Flora Brasileira de Valor Econômico Atual ou Potencial:** Plantas para o Futuro: Região Nordeste. Brasília, DF: MMA, Série Biodiversidade 51, 2018. cap., 3, p. 74-103.

REDIN, E. **Ciências Rurais em Foco.** 1 ed. Belo Horizonte: Poisson, 2021.

SILVA, F. P.; FEITOSA, R. A. A Fotografia como Ferramenta para o Ensino de Biologia no Sertão Nordestino: Narrativas do Projeto "Biofotografia". **Experiências em Ensino de Ciências,** v. 14, n. 2, 2019.

SILVA, I. F. de. F.; SANTOS, F. K. S. dos.; SILVA, L. L. da.; CANÊJO, V. P. A Fotografia como Recurso Mediático no Ensino de Geografia: A Paisagem Urbana em Múltiplos Olhares e Convergências**. Revista Ensino de Geografia**, Recife, v. 1, n. 1, 2018.

SILVA, M. M. A. S. Educação no Semiárido Brasileiro: Contextualizando a Educação Ambiental Como Estratégia de Desenvolvimento Sustentável. **Revbea,** São Paulo, v. 11, n. 4, p. 289-305, 2016.

SOUZA, S. E. de. O uso de recursos didáticos no ensino escolar. In: I ENCONTRO DE PESQUISA EM EDUCAÇÃO, IV JORNADA DE PRÁTICA DE ENSINO, XIII

SEMANA DE PEDAGOGIA DA UEM: “INFÂNCIA E PRÁTICAS EDUCATIVAS”. **Arquivo Mudi**. p. 110 – 114, 2007.

TRAVASSOS, L. E. P. A fotografia como instrumento de auxílio no ensino da Geografia. **Revista de Biologia e Ciências da Terra**, Sergipe, v. 1, n. 2, p. 1-3, 2002.